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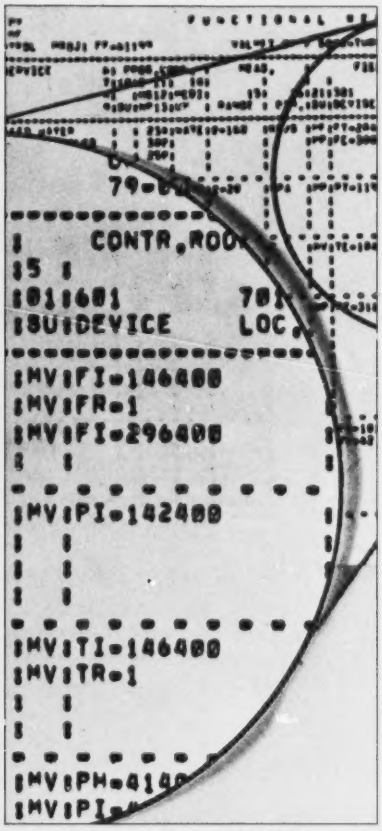

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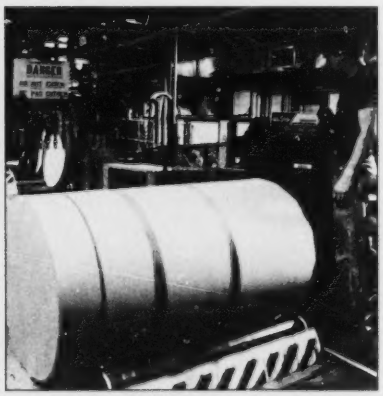

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COVER: *Computer-aided drafting station is one of the tools utilized by engineers at Simons-Eastern Co., Atlanta, Ga. (Photo courtesy of Martin Public Relations Associates.)*

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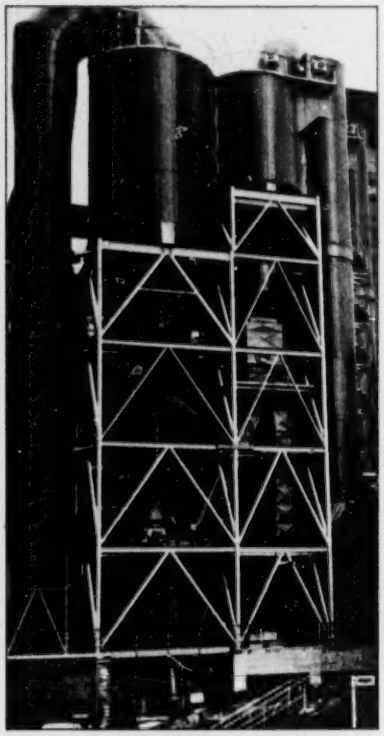

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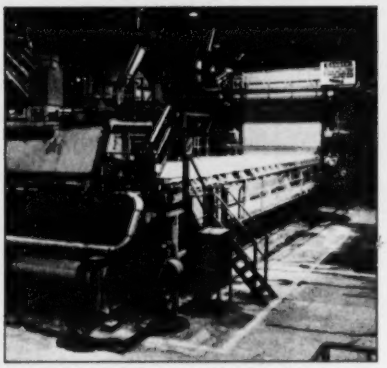

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ABP BPA

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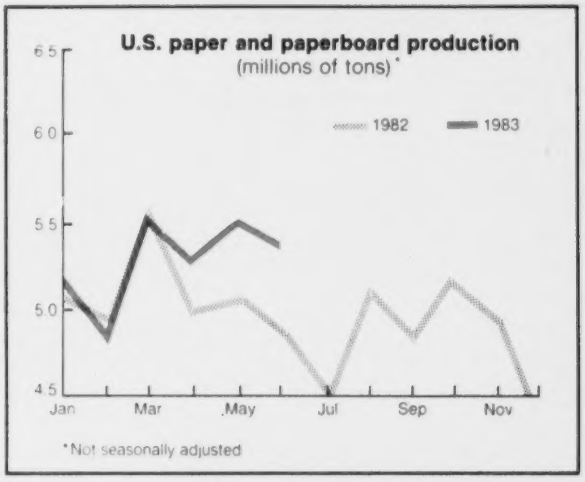
U.S. paper and paperboard production in June totaled 5.383 million tons, up 10.4% from June 1982, according to the American Paper Institute. Production for the second quarter established a new record of 16.21 million tons, just topping the old record of 16.16 million tons set in the 1981 second quarter. Total production in the first half of 1983 was at a seasonally adjusted annual rate of 62.6 million tpy, 5.6% ahead of last year and 0.5% below the record 1981 first half.

Among major grades, printing/writing paper grades continued to strengthen, with uncoated free sheet up 9.8% over last June and coated paper up 9.2%. Paperboard production for the second half of 1983 was up 5.8% over year-earlier levels, with the largest gains continuing in containerboard. Containerboard for domestic use was up 6.2% from a year ago, while corrugated box shipments rose 7.6% compared to last year, according to the Fibre Box Assn.

Canadian newsprint shipments totaled 795,000 metric tons in June, up over 30% from a year ago, according to the Canadian Pulp & Paper Assn. Newsprint mill operating rates stood at 90% in June compared with 85% last year.



		Latest month (000 short tons)	% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	June	410	−3.1	5,119	−2.3
Uncoated groundwood (s)	June	126	10.5	1,458	2.8
Coated paper (s)	June	463	11.7	5,414	9.2
Uncoated free sheet (s)	June	723	18.7	8,636	9.8
Unbleached kraft packaging and industrial (s)	June	310	6.2	3,717	0.6
Tissue	June	404	13.8	4,746	7.2
Total paper	**June**	**2,710**	**10.7**	**32,300**	**5.6**
Kraft linerboard, unbleached	June	1,236	9.7	14,793	7.5
Semichemical medium	June	396	5.3	4,639	3.3
Bleached paperboard	June	326	5.2	3,923	3.0
Recycled paperboard	June	615	13.9	7,114	6.8
Total paperboard	**June**	**2,673**	**10.0**	**31,533**	**5.8**
Total paper and paperboard*	**June**	**5,383**	**10.4**	**63,833**	**5.7**
PULP, WASTEPAPER & FIBER[2]					
Total woodpulp production	May	4,519	5.9	52,122	2.0
Market pulp production	May	583	21.5	6,410	5.8
Wastepaper consumption at paper/board mills	May	1,221	2.3	14,206	3.9
Pulpwood consumption (cords)	May	6,693	6.2	83,954	6.3
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	June	22.044	9.8	123.873†	7.6
Containerboard inventories at box plants	June 1	2,463	−7.5		
INTERNATIONAL TRADE[2]					
U.S. paper imports (including products)	May	746	—	8,339	3.8
Imports of Canadian newsprint	May	597	−3.4	6,503†	−4.1
U.S. paper exports (including products)	May	415	9.2	4,525	8.9
Exports of unbleached kraft linerboard	June	190	13.8	14,793	7.5
Exports of woodpulp	May	378	16.0	3,818	7.2
CANADIAN STATISTICS[4] (reported in metric tons)					
Total newsprint shipments	June	795	30.1	4,075†	−1.6
Operating rates	June	88%	79%	83%	83%
Inventories held by U.S. consumers	June 30	1,250	−20.3		
Woodpulp shipments (export only)	June	1,674	11.7	9,129†	−1.3
Operating rates	June	90%	85%	81%	85%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fiber Box Assn., Paperboard Packaging Council. 4. Canadian Pulp & Paper Assn.
*Includes construction and wet machine grades. †Not annualized. ‡Not directly comparable to year ago because of coding change. (s) = shipments.

SALES & EARNINGS

Second-quarter industry earnings rebound

With increased demand due to the continuing economic recovery partially offset by continued price weakness in some sectors, U.S. paper industry earnings gained a modest 5.9% in the second quarter of 1983 over a year earlier, according to a *P&P* survey of 23 companies. But forest products companies posted a dramatic 72.6% jump in second-quarter earnings on the strength of sharp increases in housing starts and price increases for lumber and other building products, according to the financial reports of six major companies.

Most chief executives were cautiously optimistic about prospects for the second half, seeing evidence for continued moderate recovery in higher volumes and large gains in earnings over the first quarter. "The only missing ingredient is a return to previous pricing levels," noted William R. Haselton, chairman and CEO of St. Regis Corp.

Transition to recovery. International Paper Co. reported second-quarter earnings of $49.8 million, up 20.9% from $41.2 million a year earlier. St. Regis Corp. reported net second-quarter income of $10.0 million, down 51.8% from 1982. Crown Zellerbach's second-quarter net income of $20.0 million was down 5.7% from last year, but CZ said "substantial nonoperating items" were included in 1982.

Mead Corp. reported a profit of $9.2 million for the second quarter compared to a loss of $1 million in the 1982 quarter. Pointing to depressed prices, Union Camp Corp. reported net income of $31.2 million for the quarter, down 7.6% from 1982.

Among tissue producers, Scott Paper Co. posted a second-quarter profit of $33 million, a 13% gain over 1982. Fort Howard Paper Co. announced record second-quarter sales and earnings, with net income of $25.1 million, up 12.3% from last year. Kimberly-Clark's net of $47 million was down 20.2% from 1982.

Wood products take off. With housing starts at the 1.7-million/year mark for most of the second quarter, a number of forest products companies reported large increases in earnings. Weyerhaeuser Co. led the way with a 126% surge in second-quarter profits, to $59.1 million. Champion International Corp. reported net income of $25.6 million, up 121.8% over last year. Georgia-Pacific Corp. showed a 21.1% decrease in second-quarter earnings to $56 million, but the $71-million profit posted last year included substantial nonoperating income. Louisiana-Pacific Corp. posted earnings of $12.1 million compared to a $4.3-million loss last year.

Canadian mills back in black. Canadian pulp and paper companies bounced back from a loss in the first quarter to post a profit of C$43,465 in the second quarter of 1983, a dramatic jump of 354% over the 1982 second quarter, according to reports from ten producers. The improved earnings came on sales of $2.7 billion, up 8.5% over a year earlier.

While the earnings gain signaled a turnaround, many companies continued to suffer from the low demand and weak prices for newsprint and market pulp that have plagued the industry during the recession. Most of the improvement resulted from rebounding demand and better prices for fine papers, linerboard, and lumber.

U.S. PAPER/FOREST PRODUCTS RESULTS

	Second quarter (000 dollars)			
Paper companies	**Sales**	**Change 1983/82**	**Earnings[1]**	**Change 1983/82**
Chesapeake	$63,219	11.6%	$2,389	35.5%
Consolidated	142,495	7.6	12,005	10.4
Crown Zellerbach	652,300	−14.1	20,000	−5.7[2]
Federal Paper	128,931	12.4	1,575	−68.0
Fort Howard	146,585	7.5	25,130	12.3
Glatfelter	62,863	0.7	4,992	4.6
GN Nekoosa	389,600	8.8	21,700	13.0
Hammermill	359,613	8.1	5,951	−43.5
Int'l. Paper	1,073,000	4.1	49,800[3]	20.9
James River (4/24)[4]	479,808	131.7	19,595	192.2
Kimberly-Clark	826,000	13.3	47,000	−20.2[5]
Longview (3/30)[4]	84,647	−11.9	921	−83.0
Mead	627,300	13.0	9,200[6]	n.m.[7]
Mosinee	24,068	19.9	1,403	41.1
Pentair	73,846	2.6	2,810	−13.8
St. Regis	699,374	6.9	9,963	−51.8
Scott	613,767	4.4	33,033	13.0
Sonoco	168,965[6]	23.4	6,394	−17.4[8]
SW Forest	173,002	23.1	187	n.m.[7]
Union Camp	461,107	18.4	31,150	−7.6
Wausau (5/31)[4]	45,611	−1.4	825	63.4
Westvaco	359,102	−4.7	11,105	−34.7
Willamette	273,919	17.0	4,954	n.m.[7]
Total	**7,929,122**	**9.7**	**332,082**	**5.9**
Forest products				
Boise Cascade	869,490	17.4	16,970	n.m.[7]
Champion Int'l.	1,061,491	11.7	25,564	121.8
Georgia-Pacific	1,699,000	20.2	56,000	−21.1[8]
Louis.-Pacific	295,540	11.1	12,140	n.m.[7]
Potlatch	227,219	10.5	9,908	21.9
Weyerhaeuser	1,281,138	17.4	59,110	126.1
Total	**5,433,878**	**16.4**	**179,692**	**72.6**
U.S. total	**13,363,000**	**12.3**	**511,774**	**22.5**

CANADIAN PAPER INDUSTRY RESULTS

Abitibi	C$447,812	7.6%	C$9,998	−55.0%[8]
B.C. Forest	239,400	10.5	(4,500)	n.m.
Con-Bathurst	366,000	−1.6	9,100	−48.0
CZ Canada	199,700	16.5	(3,900)	n.m.
Domtar	450,200	6.0[6]	8,600	n.m.[7]
Fraser	108,600	9.3	2,130	n.m.[7]
Great Lakes	129,723	18.8	(108)	n.m.[7]
Mac. Bloedel	533,700	14.3	11,700	n.m.[7]
Rolland	56,200	37.7	1,537	n.m.[7]
Scott	46,800	−50.0	2,108	−49.8
Weldwood	56,000	43.1	6,800	n.m.[7]
Total	**2,734,135**	**8.5**	**43,465**	**353.8**

1. Income after taxes, from continuing operations, excluding most significant nonrecurring items in both years.
2. 1982 quarter includes CZ Canada interest sold effective Dec. 31, 1982, and a pretax gain of $9.6 million from the sale of an interest in a Chilean paper company.
3. Includes pretax gain of $15.7 million from sale of land in Florida.
4. Period ended. James River figures are fourth quarter, Wausau third.
5. 1982 quarter included $13.9 million from a stock-for-debt swap.
6. 1982 figures restated by company.
7. Not meaningful due to loss in 1982 second quarter.
8. 1982 quarter includes $8-million gain from the sale of tax benefits and $67 million from the sale of gas/condensate royalty interest.

n.m. = not meaningful. ( ) = loss.

CAPACITY

Canadian capacity foreseen rising

Canadian capacity will rise modestly between 1982 and 1985, except for printing/writing papers and thermomechanical pulps, where increases will be hefty, according to the Canadian Pulp & Paper Assn.'s annual capacity survey.

Aside from these two product areas, the survey offers evidence that capacity rises in major grades are slowing down from the overheated pace of the last few years. Market pulp capacity in 1985 will be 5% higher than in 1982, compared with a 7.1% increase between 1979 and 1982, while newsprint will rise by only 3.4%, down from a 9.6% jump over the previous three years.

Indeed, excluding market mechanical pulp—including TMP—the growth rate in market pulp would be anemic by recent standards. And most of that TMP rise is represented by conversion to TMP from unbleached sulfate at Consolidated-Bathurst Ltd.'s Bathurst, N.B., mill—although the resulting TMP is actually intended to supply Con-Bath's Ellesmere Port, U.K., mill, not the open market.

The CPPA survey predicts that annual growth in market pulp capacity, which averaged 2.9%/year between 1972 and 1982, will fall to just 1.6%/year in the 1982-85 period. In that group, capacity of mechanical market pulp—including Bathurst—will rise at 9.9%/year, down slightly from the 10.5%/year rate of 1972-82.

As in all recent surveys, British Columbia continues to dominate the capacity news. But even there, the slackening pace of capacity additions shows up: British Columbia pulp capacity will climb just 6.8% from 1982-85, compared with the 14.9% jump predicted in last year's three-year forecast. The province's paper and board capacity is expected to go up 14.5%, down from the 25.7% seen last year. And in the previous year's survey, the numbers had been 20.7% for paper and board and 26.8% for pulp.

Newsprint. While the 1983 startup of the new Iroquois Falls, Ont., machine of Abitibi-Price Inc. is shown in the new survey—plus installation of three twin-wire formers and general machine improvements—CPPA also expects six machines to be shut down permanently and two more to be upgraded to other products. A total of 340,000 tons of new capacity will be added, bringing total industry capacity to 10.3 million tpy by 1985.

Groundwood specialties. In 1982, Consolidated-Bathurst Inc. started up a new groundwood machine at Trois Rivières, Que., and two newsprint machines are being upgraded by Abitibi-Price Inc. at Beaupre, Que., to produce groundwood specialties. Net result of all increases will be a 350,000-ton increase in Canadian capacity by 1985.

Book/writing, sanitary papers. Two new machines in this area represent an unusually dramatic jump for Canada's printing/writing industry, with a net increase of 144,000 tons of capacity expected. Most of that will come from MacMillan Bloedel Ltd.'s new Island Paper Mills machine and Great Lakes Forest Products Ltd.'s new Dryden, Ont., unit. Sanitary paper capacity will rise by 12.3% to 510,000 tpy, largely on the strength of a planned expansion at Scott Paper Ltd.'s New Westminster, B.C., mill.

Paperboard. Mill modernizations will result in capacity increases at board mills, but no dramatic increases are planned. Containerboard capacity will rise 112,000 tons to 1.9 million tpy and boxboard will go up 53,000 tons to 811,000 tpy.

Total pulp. Switchover to TMP from stone groundwood and atmospheric-refiner pulp accounts for the lion's share of planned pulp capacity increases, as capacity for all grades is seen rising by 974,000 tons to 24.1 million tpy—including a 1.2-million-ton increase in TMP capacity to 3.6 million tpy. Also down will be sulfite and dissolving/special alpha, partly as a result of the shutdown of CIP Inc.'s Hawkesbury, Ont., mill. Increases at Fraser Inc.'s Atholville, N.B., mill and Tembec Inc.'s Temiscaming, Que., facility will partially offset the shutdown.

Bleached softwood kraft pulp capacity will rise by 6.1% to 6.7 million tpy, mostly from a major expansion at Northwood Pulp & Timber Ltd. in Prince George, B.C., and projects at GLFP in Dryden and E.B. Eddy Forest Products Ltd. at Espanola, Ont.

Market pulp. Except for the deceptive TMP gain, market pulp capacity will not rise in the double digits during the period of this survey. The most significant rise in tonnage terms is the 242,000-ton jump in bleached softwood kraft, the result of the Northwood, Eddy and GLFP projects.

Canadian industry annual capacity growth, 1982-85
(000 metric tons)

Market pulp	**1982**	**1983**	**1984**	**1985**
Dissolving & special alpha	305	237	243	248
Sulfite paper grades	369	360	364	374
Sulfate paper grades	6,471	6,684	6,731	6,747
Bleached softwood	5,128	5,313	5,363	5,370
Semibleached softwood	438	464	464	463
Bleached hardwood	669	687	683	693
Unbleached	236	220	221	221
Total chemical paper grades (excl. dissolv. & sp. alpha)	6,840	7,044	7,095	7,121
Increase from prev. year	30	204	51	26
	0.4%	3.0%	0.7%	0.4%
Mechanical	472	522	629	627
Total market pulp capacity	**7,617**	**7,803**	**7,967**	**7,998**
Increase from prev. year	187	186	164	29
	2.5%	2.4%	2.1%	0.4%

Paper & board	**1982**	**1983**	**1984**	**1985**
Newsprint	9,935	10,100	10,215	10,275
Groundwood printing	750	885	1,050	1,100
Book, writing & misc.	1,008	1,026	1,101	1,152
Kraft papers	527	542	553	551
Special papers	38	38	38	38
Sanitary papers	454	465	497	510
Containerboard	1,799	1,842	1,891	1,911
Boxboard	758	789	802	811
Total (excl. bldg. & other)	15,269	15,687	16,147	16,348
Building & other	767	754	757	758
Total paper & board capacity	**16,036**	**16,441**	**16,904**	**17,106**
Increase from previous year	447	405	463	202
	2.9%	2.5%	2.8%	1.2%

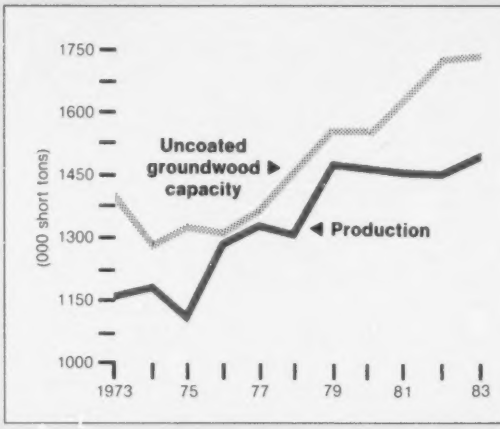
Source: Canadian Pulp & Paper Assn.

Uncoated groundwood

paper: Slow recovery with low operating rates continuing

Statistics:	1981	1982	1983e
Production, 000 tons	1,463	1,459	1,502
Capacity, 000 tons	1,625	1,742	1,747
Utilization rate, %	90.0	83.8	86.0
Imports, 000 tons	650	653	710
Exports, 000 tons	120	56	40
Apparent U.S. consumption			
000 tons	1,993	2,056	2,172
lb/capita	17.41	17.79	18.61
000 tons/$billion real GNP (1972)	1.32	1.38	1.42

Note: all tons are short tons e=estimated



Estimated capacities of major companies are:

	Annual capacity (000 short tons)		Capacity N. American market	
	U.S.	Canada	Total	%
1. Consolidated-Bathurst Ltd.	—	390	390	10.5
2. CIP Inc.	—	380	380	10.2
3. Abitibi-Price Inc.[1]	—	375	375	10.1
4. Great Northern Nekoosa	375	—	375	10.1
5. MacMillan Bloedel Ltd.	—	330	330	8.9
6. Boise Cascade Corp.	40	260	300	8.1
7. St. Regis Corp.[2]	221	—	221	6.0
8. Domtar Inc.	—	200	200	5.4
9. Madison Paper Industries	144	—	144	3.9
10. Fraser Inc.	135	—	135	3.6
11. Crown Zellerbach	130	—	130	3.5
12. Kimberly-Clark Corp.	93	28	121	3.3
13. Bowater Inc.	70	—	70	1.9
14. Pejepscot Paper[3]	56	—	56	1.5

1. Does not include net increase of 60,000 tpy at Beaupre mill; startup in October 1983.
2. Includes 34,000 tpy at Hennepin Paper Co., acquired at start of year.
3. Subsidiary of Hearst Corp.

North American capacity (1983); **3.710 million tons** (U.S. 1.747; Canada 1.963)
Capacity share of top five companies: 49.9%
Capacity share of top ten companies: 76.8%

Grade structure: Uncoated groundwood papers are members of the same family as newsprint in terms of manufacturing process and physical properties, although the uncoated groundwood grades have better printing characteristics and endurance plus higher brightness—typically 64 to 72 Elrepho compared with 56 to 62 for newsprint. Uncoated groundwood constitutes, with newsprint, the bottom end of the pricing scale for printing papers. Typical end-uses include directories, catalogs, periodicals, advertising circulars and business papers, such as computer printouts. Basis weight range is 20 lb to 45 lb/3,300 ft².

Production/capacity: U.S. production of these grades peaked in 1979 and fell slightly through 1982 before turning back up with a 3.1% rise in the first five months of 1983, according to American Paper Institute figures. Capacity rose slightly as Madison Paper Industries' new 165,000-tpy machine climbed up the startup curve after coming online in late 1981, but is expected to reach only 1.749 million short tpy in 1985.

Canadian capacity is grossly distorted by Canadian Pulp & Paper Assn. figures due to underreporting among producers to avoid U.S. tariff penalties. CPPA places 1983 capacity at 976,000 short tpy and 1984 at 1.157 million short tpy, but *P&P* believes more accurate figures would be 1.94 million tpy and 2.05 million tpy.

Further complicating the question of capacity is the ability of mills to swing capacity among newsprint, uncoated groundwood and coated groundwood. For example, the normal three or four major producers of paperback book stock were joined in 1982 and 1983 by an estimated 12 or more new competitors—newsprint and coated paper mills with underutilized capacity. *P&P* capacity estimates, therefore, focus on those machines which mills would optimally like to see producing uncoated groundwood.

Outlook: During the back-to-back recessions of 1979-82, uncoated groundwood mills were squeezed between overcapacity in newsprint and the same problem in coated groundwood. Consumption did not fall drastically, however, and as coated groundwood and newsprint markets recover in 1983 and 1984, uncoated groundwood demand should once again approach the 2.2-million-ton level of 1979. (These numbers necessarily reflect only official Canadian production levels since real Canadian production and shipments to the U.S. are impossible to track.)

Pricing: Pricing for the most part stagnated at best in 1982, and in the case of roto news and supercalendered paper, transaction prices fell by 5% to 10%. List prices of some groundwood grades are ($/short ton): 25-lb roto catalog—1974, 320; 1975, 320; 1976, 345; 1977, 405; 1978, 425; 1979, 468; 1980, 495; 1981, 551; 1982, 551; 1983, 600. 30-lb standard rotonews printing paper—1978, 345; 1979, 386; 1980, 427; 1981, 490; 1982, 505; 1983, 505.

Industry staffing kept 'lean and

Much of the industry appears in better position for recovery than two years ago due to cuts made in personnel since then

By DEBRA A. ADAMS, News Editor

■ Austerity measures undertaken during the 1981-82 economic recession to reduce personnel costs appear now to be more than an emergency reaction to plummeting earnings. The effects are expected to have a long-term impact on the way pulp and paper companies operate.

Many in the industry are likely to remain "lean and mean" for some time to come, even when business returns to normal, said Graham Dallas of British Columbia Forest Products Ltd.

"The recession has been too long and too deep and we're not going to forget too quickly," said Carol Olwert of St. Regis Corp. "I don't see the company going back to the way it did business."

In a *Pulp & Paper* survey of 32 North American companies—most of which have reduced their work force significantly and made other personnel cost reductions in 1982—only a few intend to indiscriminately restaff as sales pick up. Most plan to look closely at any openings—reviewing them to determine whether they should be filled, combined with one or more other positions, or be eliminated.

In addition to maintaining a lean staff, the majority of companies polled are keeping travel budgets, training costs, and other expenses down, either through voluntary employee cooperation, or by requiring strict adherence to budget constraints.

TRAINING ESPECIALLY HARD-HIT. Training was particularly hard hit during the recession. It is usually one of the first of the services offered to employees to be cut when budgets are slashed, said BCFP's Dallas. "Training usually gets hit first and then personnel and public relations," he said.

Yet, BCFP continued some training programs during mill shutdowns in an effort to make the best use of staff time, Dallas noted. Abitibi-Price Inc. also continued its training programs but made sure that each course was essential.

From the survey results, it appears nearly all companies reduced travel budgets as well. In only a couple of cases did travel costs actually increase.

Southwest Forest Industries Inc. reduced travel costs in certain areas but increased its managers' travel budgets. The company felt managers should keep in close contact with their staff to maintain morale and productivity levels while the work force was being reduced.

MAINTAINING MORALE IMPORTANT. Some companies made special efforts to maintain good employee relations while the austerity programs were underway. Others claim morale improved as a natural consequence of hard times in the industry.

At BCFP, morale among managers improved because of a "common goal of survival," said BCFP's Dallas. "In some cases the animosity that existed among management and union hasn't disappeared completely but it has been helped by everybody having a common goal," he said.

In addition, the opportunity for advancement was better for employees as staffing was reduced at BCFP.

"When there are less people to go around, there's more work. It means you get to do part of someone else's job, too. So there's been many cases where people have actually appreciated the expanded opportunities that having more work to do gave them," he noted.

OUTPUT HAS DROPPED. At CIP Inc., morale suffered as a result of measures instituted there. "The output per person has not increased in view of the work load people have and it has created an incredible amount of anxiety and tension which is counterproductive," said Roger Allard of CIP.

In a study done for the Conference Board of Canada, Sally R. Luce indicated that companies in which morale was low would have a problem with high employee turnover.

"Already the head-hunting firms are getting a disproportionately high number of inquiries from staff in companies that managed retrenchment poorly."

"When the economy picks up, its going to be like Exodus in the Bible. Except these peopole won't wait for the seas to part; they'll rent boats and canoes," she said.

In Canada, the government tried to prevent the loss of salaried personnel on layoff by allowing companies to give its laid-off workers some compensation on top of government unemployment benefits.

Many companies have tried to alleviate as much suffering as possible while reducing personnel. Many of-

mean' after recession's cutbacks

fered early retirement programs or instituted hiring freezes and trimmed staff through attrition. Some laid off all the most recently hired employees.

OPENINGS SCRUTINIZED CAREFULLY. Many companies did not reduce personnel by cutting departments across the board. Instead, they carefully reviewed jobs to determine which were the most expendible.

Abitibi-Price Inc. vice president of personnel, Warner Woodley, said the company's philosophy in trimming its staff was "trying to get lean, get far more effective, but not cut into the muscle or bone of the organization."

"We want to get rid of that excess poundage; get back into good fighting shape," he added.

MacMillan Bloedel Ltd. cut all departments, but some were hit more severely than others, including personnel and public relations. In-house advertising was completely eliminated.

"The whole company was reorganized and decentralized, broken into geographical regions which became

TABLE 1: **Personnel cost reductions since 1982 in North American pulp and paper industry.**

Company	Reduced work force	Cut salaries	Frozen salaries	Reduced travel, training
Abitibi-Price Inc.	15%	No	Yes	Yes
Boise Cascade Corp.	Yes	No	No	No
Bowater North America Corp.	Yes	No	21 mo	Yes
British Columbia Forest Products Ltd.	25%	No	Yes	Yes
Champion International Corp.	6%	No	1 yr	Yes
CIP Inc.	25% to 30%	No	Management only	Yes
Consolidated-Bathurst Inc.	3%	Top management—10%; middle management—5% 5/82 to 11/82	Top executives in 1983	Yes
Container Corp. of America	Yes	No	No	No
Crown Zellerbach Corp.	20%	No	No	No
Domtar Inc.	10%	No	Junior/middle management—6 mo; senior management—9 mo; senior executives—1 yr	Yes
Donohue Inc.	No	No	Officers only—1 yr	Yes
Eddy Forest Products Ltd.	No	No	No	No
Georgia-Pacific Corp.	No	No	6 mo	Yes
Great Lakes Forest Products Ltd.	8.7%	No	Since Jan. 1, 1983	Yes
Great Northern Nekoosa Corp.	No	No	3 mo	Yes
Hammermill Paper Co.	Yes	No	No	No
International Paper Co.	6.6%	No	5 mo	Yes
Irving Pulp & Paper Ltd.	No	No	No	No
ITT Rayonier Inc.	Yes	No	Yes	Yes
James River Corp.	No	No	3 to 5 mo	Yes
MacMillan Bloedel Ltd.	Yes	Management—10% to 15%, 4 mo	Management—since 1981	Yes
Manville Forest Products Ltd.	20%	No	6 mo	Yes
Mead Corp.	12%	No	21 mo	Yes
Ontario Paper Co. Ltd.	No	No	6 mo	Yes
Packaging Corp. of America	20%	Some	3 to 6 mo	Yes
Potlatch Corp.	6%	No	No	Yes
St. Regis Corp.	10%	No	Yes	Yes
Scott Paper Co.	15%	No	No	Yes
Sonoco Products Co.	60 people	No	8 mo	Yes
Southwest Forest Industries Inc.	10%	4% to 12%—16 mo	16 mo	Yes
Weyerhaeuser Co.	20%	No	2 to 2½ yr	Yes
Willamette Industries	30%	No	1/83-7/83	Yes

more directly responsible for the operations," said MB's Nancy Scott.

CUTS IN ENGINEERING. Mead Corp. cut its human resources, engineering, public relations, and financial departments the most. "We didn't just march through the company and take people out. We looked at jobs and functions, and I think we're a better company for it," said Tom Schumann, Mead corporate director of staffing and development.

"We found that there were things we could do more effectively in different ways," he said.

British Columbia Forest Products also cut some departments more than others. The personnel department was among the departments cut most severely. The corporate engineering department, which had six or eight people, was virtually eliminated. "Without any projects, we really have no use for any in-house engineering work," BCFP's Dallas.

Champion International Corp. also closely reviewed its staffing needs before laying off employees as its chairman Andrew Sigler feels cutting indiscriminately is "bad employee relations," indicated one corporate executive.

"He's been through those blood-lettings, and that's no way to run a busines," he noted.

EMPLOYEE RELATIONS EFFORTS EMPHASIZED. In an effort to maintain good employee relations, some companies launched programs to explain the austerity measures being taken and elicit support.

At Donohue Inc., meetings about the recession's effect on the company were held with small groups of workers in an attempt to get them to improve efficiency and productivity to keep the mills running. So far no workers have been laid off and no positions have been eliminated, said Donohue's Jacques Emond.

Abitibi-Price tried to get its employees involved in working toward the company's goal to reduce costs and improve efficiencies, resulting in some good suggestions. Two women workers in the word processing department saved the company $63,000 by coming up with a plan for doing some work in-house instead of contracting it out, said Woodley.

To maintain good relations with its employees on layoff, Mead provided job listings at all its operations. Weyerhaeuser gave generous severence pay and had out-placement programs and services.

TABLE 2: **Change in sales/employees (1977-82) for 11 pulp and paper companies.**

Company	% change
Scott Paper Co.	72.8
Boise Cascade Corp.	72.3
International Paper Co.	67.8
Crown Zellerbach Corp. (U.S. only)	63.0
Great Northern Nekoosa Corp.	61.1
Westvaco Corp. (10/31 yr)	55.6
Weyerhaeuser Co.	43.8
Fort Howard Paper Co.	36.0
Champion International Corp.	33.1
Union Camp Corp.	32.9
Georgia-Pacific Corp.	23.6
Average	49.6%

Source: First Manhattan Co. Research

LONG-TERM REORGANIZATIONS. Staff reductions at many companies were started as a short-term reaction to eroding profits but became, in many cases, highly organized long-term reorganizations of operations. Some of the companies, however, had started these programs years before the recession.

Weyerhaeuser Co. began a long-term reorganization program late in 1980, said Steve Pierce of Weyerhaeuser. "The economy spurted it on a bit quicker, so we've had a combination of overhead reductions and organizational redesign, and that's continuing," he noted.

Boise Cascade Corp. began to reorganize its corporate staff a few years ago, reducing the number of employees gradually over that period.

"We have been for a number of years examining the staffing levels and for some time have been combining jobs or reducing staff where it made sense and adding workers in other areas," said Sam Donaldson of Boise Cascade.

Great Northern Nekoosa Corp. also didn't reduce its work force during the recession because of a long-standing policy on staying lean.

"We looked at the situation at the start of the recession as business conditions worsened and felt that we were pretty efficiently staffed in the first place and didn't have much fat to trim," said one GNN executive.

At James River Corp., though, the philosophy is "a company can never say it's as lean as it can be," said Robert Sherry, James River senior vice president of human resources development. "We're constantly looking for areas where we might reduce costs," he noted.

CUT EXECUTIVES' PAY. Possibly in an effort to boost morale and as a example to employees, pay freezes and cuts were not limited to the rank and file at many companies. In some cases top executives took the steepest reductions.

The pay of the top five executives at MacMillan Bloedel Ltd. were reduced substantially. Their remuneration dropped to an average of C$183,000 in 1982 from C$193,000 in 1981, with chairman Calvin Knudsen's salary dropping to C$336,000 from C$360,000, according to a report from *Canadian Paper Analyst.*

Some other companies, however, raised their executives' pay during this time. At Great Lakes Forest Products Ltd., the average for the top five went to C$156,000 in 1982 from C$120,000 in 1981. At Scott Paper Ltd., the average went to C$141,000 in 1982 from C$129,000 in 1981, the report noted.

But most companies remained frugal during this time and undertook various programs to reduce payroll costs. Some tried to be as equitable as possible, with the bulk of the burden on the higher salaried people.

SALARY FREEZES IMPOSED. Weyerhaeuser froze managerial and middle-management wages for two years, but its senior managers' salaries were frozen for two-and-a-half years.

Domtar Inc. began salary freezes for all its employees on Jan. 1, 1983, but for junior- and middle-managers the freeze lasted just six months, while senior managers will not get a pay increase for nine months and senior executives will wait an entire year.

Southwest Forest Industries reduced salaries by 4% to 12% depending on the salary level, with lower-salaried people being cut last.

At Crown Zellerbach Corp. a pay-for-performance program was initiated in 1982. Remuneration is based on how employees meet objectives set for them in their respective departments, said a corporate executive.

AUSTERITY BENEFICIAL TO SOME. The austerity measures taken since early 1982 have had varying affects on companies. Some indicated operations proceeded normally, while others experienced abnormal affects.

CIP's Allard indicated that the elimination of corporate long-term planning has had a profound effect on the company's goals. "It's all short-term, knee-jerk reaction; and, that for a business like us is quite serious," he said.

"Our bench strength needs to be rebuilt," said Mead's Schumann.

But, though some of the support functions eliminated during the past two years are missed, operations have not been significantly affected, he noted.

"We're not providing all the services we did before, but I'm not so certain that's wrong," Schumann said.

GOT RID OF DEADWOOD. Consolidated-Bathurst Inc. found that the cuts in the company's work force have been "very beneficial," according to Con-Bath's Denise Dallaire.

"It reduced an awful lot of deadwood," she noted. "The people in place have taken over a part of the work that was eliminated and are producing more in the same amount of manhours."

Potlatch Corp.'s Holly Hutchinson called the results of the cuts "a more full utilization of existing talent. The people have now picked up additional responsibilities so they have a much fuller pattern," he noted.

"We have learned that we can do the same job just as well or maybe better with fewer people in some instances," said St. Regis' Olwert.

First Manhattan Co. Research indicated in a recent report that most companies will be coming out of the recession with less overhead and greater potential for improved earnings.

The report noted that of the companies surveyed, Scott and Boise Cascade have recorded the highest increases in sales per employee as a result of staff reductions since 1977.

COMPANIES STARTING TO REHIRE. In most cases the *Pulp & Paper* survey shows salary freezes and cuts, layoffs, and other austerity measures are no longer in effect. Companies are starting to rehire and lift certain restrictions.

But, most companies indicate that the loosening of budget restraints will not mean a return to the free spending of the past. The policies started during the recession are expected to affect operations for some time to come.

"I think we're better off from the steps we've taken," said Mead's Schumann. "I don't think we'll get ourselves into the position where we have to take jobs away. We'll keep ourselves that lean."

"There is much more conservatism," said Con-Bath's Dallaire. "I don't know how long it's going to last. Probably until we start making some money."

"The guiding philosophy seems to be we survived this recession, the only way we're going to survive the next recession is to keep with this lean mentality," said BCFP's Dallas. ■

ROSIN-ALUM SIZING

(Continued from page 173)

or broke is notorious for causing excessive alum usage on machines having rosin/alum sizing. Major techniques for achieving good alum usage include the proper selection of addition points, and allowing the system to operate at a pH around 6.5, at the lowest. Reed & Smith does not attempt to control pH or to lower it artificially.

IMPORTANCE OF PRESSING, DRYING. The importance of pressing and drying conditions in redistributing rosin on the fiber surface is implicit in the hypothesis outlined previously. This can be clearly seen at Reed & Smith, particularly in terms of the influence of moisture content leaving the presses.

Work at the mill has shown that an increase in wet-press moisture from 60% or 61% (up to 63%) can lead to a loss of sizing, with the Cobb test going from about 20 g/m^2 to 40 or 50 g/m^2, unless corrective action is taken. Likewise, it has been clearly shown on several occasions that a loss of sizing can be corrected by adjustment of dryer temperatures before the size press.

The rosin and alum usages discussed in this article refer to the particular size press conditions at Reed & Smith. For most grades, the Cobb value ahead of the size press is between 50 and 100 g/m^2, and following surface sizing and further drying, a hard-sized final sheet is achieved.

However, it is possible to hard-size the sheet ahead of the size press if this is required to control the size press conditions, although this will lead to rosin usages between 0.5% and 1.0%.

SUMMARY OF ADVANTAGES. In summary, use of rosin emulsion/alum sizing in calcium carbonate filler systems offers these advantages:

- For mills that have difficulty with reactive sizes, the benefits of calcium carbonate loading may still be obtained at a relatively modest sizing cost. These benefits generally include reduced energy in refining, improved drainage and drying, and the ability to achieve higher filler contents.
- The system is relatively trouble-free and easy to control. At Reed & Smith, shift quality control testers optimize rosin usage continuously, based on Cobb values obtained at the reel.
- Transition from chalk to clay or mixed fillers, or vice versa, can be fairly easily made.

Disadvantages of the system include:

- Rosin usage slightly higher than in acid systems
- A tendency to develop foam problems, which require careful control
- A tendency for deposits to form in wet-end piping.

Rosin sizing with carbonate filler is also done in other mills in Great Britain, as well as France and South Africa (but this is not common). Some mills are said to run with carbonate filler levels around 30%. As with the so-called neutral sizes, experience has shown that higher filler contents can be obtained with carbonate than with clay before strength tests fall off. ■

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Total sulfur output, paper industry use down in 1982

By BARRY SHOCKETT

Despite last year's sharp drop in sulfur demand, sulfuric acid use was down over 2 million metric tons. Recovered sulfur output rose 3% to 4%, while Frasch production declined about one-third. Growth in recovered sulfur is expected to continue in 1983, reducing Frasch sulfur's share from 60%, to 39%. New capacity in the U.S. and Middle East has reversed the steady growth of Canadian exports, although domestic demand has also been falling.

U.S. statistics for elemental sulfur (000 metric tons)

	1979	1980	1981	1982	1983e
Capacity	13,000	14,540	15,300	16,000	16,500
Production[1]	10,827	10,785	10,607	8,614	7,750
Shipments[2]	12,015	11,837	10,117	7,942	8,650
Imports	2,494	2,523	2,522	1,845	1,600
Exports	2,044	1,782	1,392	978	1,050
Apparent consumption	12,465	12,578	11,247	8,809	9,200
Sulfuric acid	9,547	10,257	9,193	6,977	6,800
Pulp and paper	124	94	112	88	95
Other[3]	2,794	2,227	1,942	1,744	2,305

1. Recovered and Frasch sulfur only
2. Excluding sulfur content of byproduct H_2SO_4 and H_2S_1 and SO_2
3. Including agchems, paints, petroleum refining, rubber and other plastics, inorganic chemicals, etc.

Source: U.S. Bureau of Mines

Canadian statistics for elemental sulfur (000 metric tons)

	1979	1980	1981	1982	1983e
Capacity	11,023	11,132	11,242	11,290	11,535
Production	6,313	7,628	7,962	6,673	6,860
Shipments	6,105	7,820.5	8,309.5	6,792.5	6,260
Imports	1.7	1.8	4.6	2	2
Exports					
U.S.	1,265	1,517	7,666	1,132.5	1,000
Offshore	3,915.5	5,315.5	5,796	4,979	4,500
Domestic demand	924.5	888	847.5	681	762
Sulfuric acid	594	575	540	410	470
Pulping	294	262	252	220	238
Other*	51.5	51	55.5	51	54

* Including carbon disulfide, hydrogen sulfide, rubber, asphalt, soil nutrients, and others.

SULFUR

UNITED STATES

Uses: Sulfite pulp mills consume most of the sulfur used by the pulp and paper industry; some is also utilized by kraft mills. The largest end use (80%) is the production of sulfuric acid.

Demand: The pulp and paper industry used an estimated 88,000 metric tons in 1982, vs 112,000 metric tons in 1981. Total 1982 consumption was down to 8.8 million metric tons, vs 11.25 million metric tons in 1981.

Sources: Sulfur is produced in two ways: Frasch and recovered. Producers are: Frasch-Duval, Freeport Sulfur, Texas Gulf, Recovered-Shell, Amoco, Chevron Chemicals, Exxon, Standard (Calif.), and Standard (Ind.).

Availability: New output from Wyoming gas fields, together with continuing weak demand, means no foreseeable sulfur shortage. 1982, market; 1981, tight; 1980, tight; 1979, very tight.

Pricing: Prices of both sulfur types fell in the last year. In the third quarter, Frasch product, f.o.b. Tampa, was quoted at $130.30/metric ton, with a $9.84/metric ton discount for large-volume buyers. Recovered sulfur on the Gulf Coast was listed at $124.00/ton. Pricing history: 1982, $132.50-$138.75/metric ton, crude, bright, f.o.b. Gulf ports; 1981, $131.75-$138.73/metric ton; 1980, $103.31-$109.05/metric ton; 1979, $70.60/metric ton.

Forecast: As the economy recovers, sulfur use should rise 5%-6% in 1983, but prices will stay weak until fertilizer markets normalize. Pulp mill use will reach about 95,000 metric tons.

CANADA

Uses: Sulfite pulp mills use sulfur to make cooking liquor; kraft mills use it to make chlorine dioxide. Major end use is in sulfuric acid production.

Demand: Pulp mills used 220,000 metric tons in 1982, or 32.5% of the total, a 13% drop from 1981.

Sources: Major recovered sulfur producers are Amoco, Canadian Occidental Petroleum, Canterra Energy, and Chevron Standard.

Availability: Sulfur capacity rose 200,000 metric tons in 1983 and will grow 700,000 tons by 1987, ensuring supply. 1982, market; 1981, tight to market; 1980, tight; 1979, tight.

Pricing: The average sulfur selling prices, f.o.b. Alberta producing points, rose modestly in 1982. 1982's average for North American shipments was C$64.36/metric ton in December, vs $63.15 in 1981. Prices dipped in January 1983 then slipped to $59.74 in May.

Export prices f.o.b. Alberta rose to C$82.24/ton in January, and then fell 10%, to $94.01/ton in May. Alberta lists are in the $78.50-$83.50/ton range. Pricing history: 1982, crushed, slate, or molten, f.o.b. plant, $73.80-$81.18/ton; 1981, $59.58-$74.48/ton; 1980, $32.76-$59.98/ton; 1979, $24.82-$29.79/ton.

Forecast: Although growth in mechanical pulp capacity will continue to decrease sulfur use by sulfite mills over time, a slight increase is predicted for 1983. By 1987 pulp mill use will drop to 190,000 metric tons.

Mr. Shockett is consulting editor-chemical markets for Pulp & Paper.

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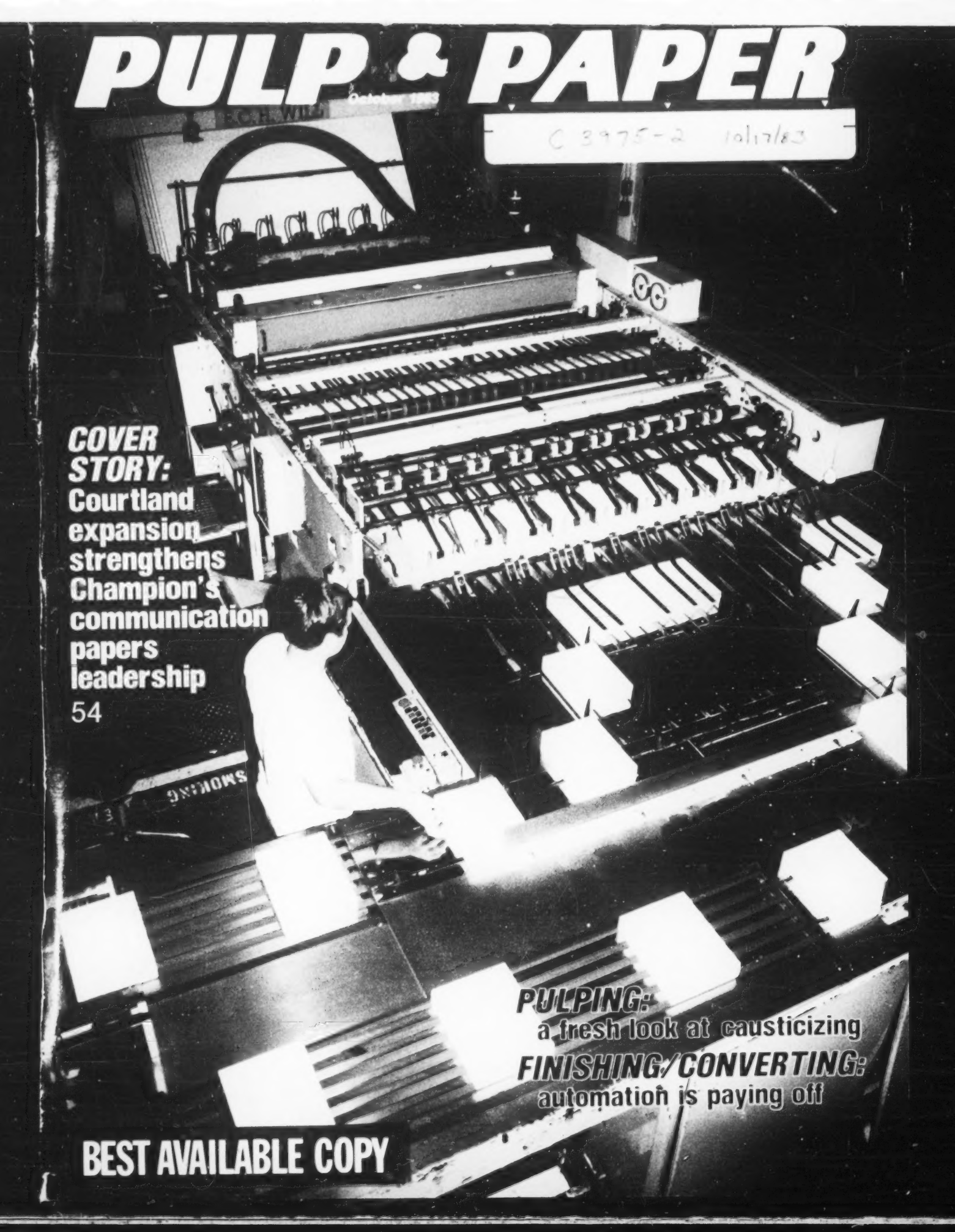

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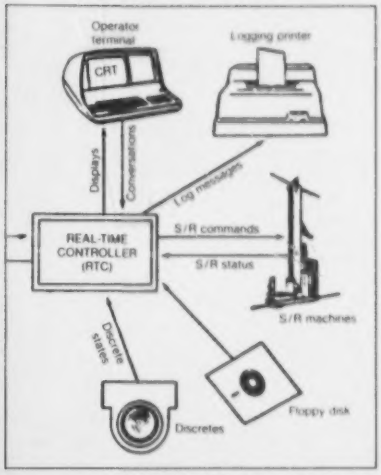

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ABP BPA

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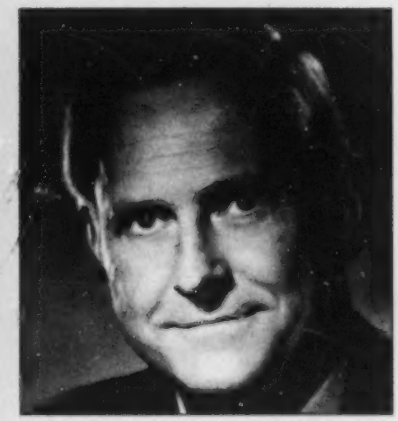

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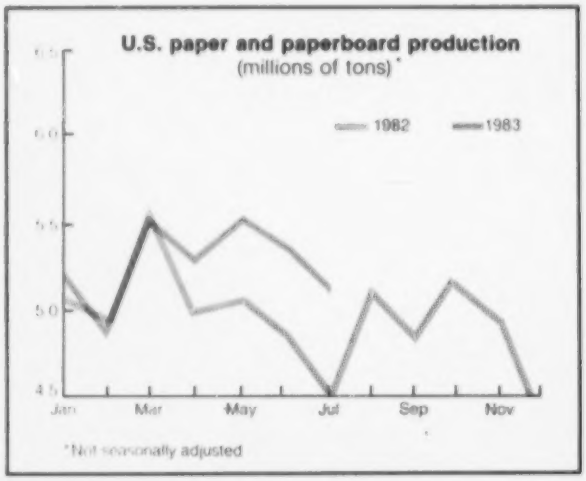
U.S. paper and paperboard production in July totaled 5.108 million tons, up 13.1% from the depressed year-earlier level and about 3% above July 1981, according to the American Paper Institute. The June-July two-month moving average of seasonally adjusted data showed paper and paperboard production at a rate of 63.9 million tpy. Preliminary data for August indicate that the July-August average will probably show a further gain, bringing the rate above 64 million tpy.

Among major grades, printing/writing papers continued to show the strongest gains in July, fueled by heavy demand for coated papers and uncoated free sheet. Newsprint, the only grade to decline in July, was down 1.5% compared to a year earlier. Paperboard production for the first seven months of 1983 was up 6.5% over last year, with containerboard, up 9.2%, leading the way. Corrugated box shipments were up 5.3% from last year, according to the Fibre Box Assn.

Canadian newsprint shipments totaled 679,000 metric tons in July, up 10.6% from July 1982, according to the Canadian Pulp & Paper Assn. Newsprint mill operating rates stood at 80% in July compared with 71% last year.



		Latest month (000 short tons)	% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	July	417	4.3	5,101	−1.5
Uncoated groundwood (s)	July	122	7.0	1,462	2.7
Coated paper (s)	July	456	16.3	5,454	10.5
Uncoated free sheet (s)	July	664	17.9	8,561	10.1
Unbleached kraft packaging and industrial (s)	July	285	–	3,677	1.3
Tissue	July	370	12.1	4,692	7.2
Total paper	**July**	**2,550**	**10.7**	**32,091**	**6.1**
Kraft linerboard, unbleached	July	1,199	19.4	14,728	9.2
Semichemical medium	July	386	12.2	4,635	4.3
Bleached paperboard	July	306	4.1	3,884	3.1
Recycled paperboard	July	561	16.6	7,050	7.8
Total paperboard	**July**	**2,553**	**15.8**	**31,380**	**7.0**
Total paper and paperboard*	**July**	**5,103**	**13.1**	**63,472**	**6.5**
PULP, WASTEPAPER & FIBER[2]					
Total woodpulp production	June	4,391	5.0	52,217	2.6
Market pulp production	June	547	11.4	6,440	6.5
Wastepaper consumption at paper/board mills	June	1,205	6.1	14,248	4.7
Pulpwood consumption (cords)	June	7,188	14.1	85,002	7.2
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	July	19,582	4.8	143,455†	5.3
Containerboard inventories at box plants	July 1	2,511	−5.2		
INTERNATIONAL TRADE[2]					
U.S. paper imports (including products)	June	836	18.6	8,622	6.4
Imports of Canadian newsprint	June	650	14.0	6,719†	−1.1
U.S. paper exports (including products)	June	393	1.8	4,556	6.0
Exports of unbleached kraft linerboard	July	186	27.4	2,215	12.3
Exports of woodpulp	June	324	7.3	3,636	1.7
CANADIAN STATISTICS[4] (reported in metric tons)					
Total newsprint shipments	July	679	10.6	4,755†	—
Operating rates	July	80%	71%	83%	86%
Inventories held by U.S. consumers	July 31	1,251	−17.2		
Woodpulp shipments (export only)	July	546	17.4	3,773†	9.6
Operating rates	July	86%	68%	82%	82%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fiber Box Assn., Paperboard Packaging Council. 4. Canadian Pulp & Paper Assn.
*Includes construction and wet machine grades. †Not annualized. ‡Not directly comparable to year ago because of coding change. (s) = shipments.

Paper-grade chemical market pulp: Market beginning new upswing

Statistics:	1981	1982	1983e
United States			
Production, 000 tons[1]	4,402	4,211	4,548
Annual capacity, 000 tons	4,876	4,900	4,961
Utilization rate, %	90.3	85.9	91.7
Apparent U.S. consumption, 000 tons	4,479	3,971	4,245
Imports, 000 tons	2,390	1,998	2,137
Exports, 000 tons	2,317	2,239	2,440
Canada			
Production, 000 tons	6,081	5,283	5,680
Annual capacity, 000 tons	6,810	6,840	7,044
Utilization rate, %	89.3	77.2	80.6

1. All tonnage is in metric tons (= 2,205 lb or 1.1023 short tons).

GRADE STRUCTURE. Paper-grade chemical market pulp is sold in the open market and does not include captive pulp used on-site or shipped to affiliated mills within North America. Pulp is divided into grades based on whether it is made from softwood or hardwood, northern or southern fiber, sulfate or sulfite pulping processes, and whether it is bleached, semibleached or unbleached. Northern bleached softwood kraft (NBSK) is the premium grade because of its long fiber and strength. Sulfate (kraft) has become the predominant pulping process, with sulfite now only 5% to 6% of production. Market pulp is sold in sheets, flash-dried bales or rolls. Some paper pulp also goes into nonpaper uses such as diapers (fluff pulp) and molded pulp products.

PRODUCTION/CAPACITY. In 1982, North American chemical paper-grade market pulp production totaled 9.5 million metric tons, down 9.4% from 1981. Canadian output dropped 13.1%. U.S. production declined a more moderate 4.7%.

Market pulp production has begun to pick up this year, helped by strong white paper mill operating rates in the U.S. This is causing some integrated companies to stop selling in the open market. For all of 1983, Canadian pulp production is projected to rise 7.5% to 5.7 million tons, while U.S. output is to rise 8.0% to 4.5 million tons. This assumes no major strike in British Columbia.

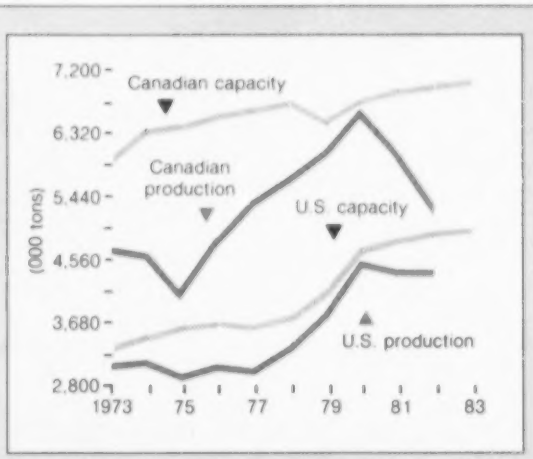
Norscan producer stocks have dropped from a peak of 1.93 million tons in August 1982 to 1.56 million tons at the end of July and some further decline is likely. NBSK has been in oversupply while hardwood is relatively tight.

PRICING. Pulp prices have been firming this year, after plunging roughly 25% in 1982. The benchmark price of NBSK in northern Europe plunged from $545/metric ton in the first quarter of 1982 to around $410 early this year. A new $440 price ($450 in the U.S.) announced for Apr. 1 has been heavily discounted, although increases on southern pine and hardwood have been successful.

Financially squeezed U.S. and Canadian mills hoped for a large fourth-quarter price hike, but only a moderate move now seems likely. The domestic price for NBSK will remain unchanged this quarter at $450, while southern grades move up $25/ton or more.

The situation in Europe was still unclear—but not promising. European paper mills have been resisting an increase because the strong dollar has already caused their pulp costs to rise sharply. And Nordic pulp producers have little incentive to lead a price move since they are profitable due to weak currencies.

Year-end U.S. market prices for key grades in $/short ton (* indicates discounting): NBSK—1976, $372*; 1977, $310*; 1978, $340; 1979, $417; 1980, $481; 1981, $513; 1982, $408*; southern bleached softwood kraft—1976, $320*; 1977, $260*; 1978, $320; 1979, $400; 1980, $460; 1981, $450; 1982, $350*; southern bleached hardwood kraft—1976, $280*; 1977, $240*; 1978, $290; 1979, $385; 1980, $435; 1981, $385*; 1982, $320.



Estimated capacities of major companies are:

	Annual capacity (000 metric tons)	Capacity share ($)
1. Weyerhaeuser [1,2,3,5]	1,000	8.3
2. Georgia-Pacific [1,2,5]	750	6.2
3. Great Lakes Forest Products [1,2,3]	675	5.6
4. Parsons & Whittemore [1,2]	570	4.7
5. BC Timber [1,3]	565	4.7
6. Canadian Forest Products [1,3,4]	525	4.3
7. B.C. Forest Products [1,3,4]	480	4.0
8. MacMillan Bloedel [1,3,4]	460	3.8
9. Federal Paper Board [1,2]	331	2.8
10. Boise Cascade [1,4]	325	2.7
11. ITT Rayonier [1,5]	305	2.5
12. CIP [1,4]	290	2.4

Several companies with major holdings in the market pulp industry are not shown above to avoid double counting of capacity: Canadian Pacific, 660,000 tpy (54% of Great Lakes, 100% of CIP); Mead, 450,000 tpy (50% of Northwood Pulp, 50% of Brunswick Pulp & Paper, and 28% of BCFP); and Noranda, 431,000 tpy (49% of MacMillan Bloedel, 100% of Maclaren, and 64% of Fraser).

1. bleached softwood kraft; 2. bleached hardwood kraft; 3. semibleached softwood kraft; 4. unbleached softwood kraft; 5. bleached sulfite.

North American capacity (1983): 12.005 million tons
Capacity share of top five companies: 29.7%
Capacity share of top ten companies: 47.3%

Wastepaper usage to keep rising,

Shortages of old corrugated and news likely as producers continue to increase portion of secondary fiber used in liner and newsprint

By DEBRA A. ADAMS, News Editor

■ Paper stock markets are expected to continue through next year the robust recovery started earlier this year due to various factors which will keep supplies of some grades tight and demand high, according to the concensus from speakers at the National Assn. of Recycling Industries' paper roundtable in Chicago in July.

Domestic and export markets have improved since earlier this year, straining supplies of several grades of secondary fiber, particularly old corrugated containers (OCC) and new double-lined kraft corrugated cuttings.

Mill operating rates have been creeping up and should start improving as the economic recovery accelerates in the fourth quarter, some speakers forecast.

CONCERN ABOUT OCC SHORTAGE. Concern about possible shortages of OCC have led to the formation of a special committee of the paper recycling division of the American Paper Institute. Howard P. Ingram of Stone Container Corp. told conferees at the NARI meeting. The committee's objective, which Ingram heads, is to investigate ways to increase the collection of OCC to avoid future shortages, he said. Recycled paperboard mills, which operated at 85.3% through July 10 compared to 80.7% at the same time last year, are increasing their consumption of secondary fiber due to improved running times and because of increased use of paper stock as a percentage of fiber furnish, said Ingram.

In 1970, only about 200,000 tons of OCC were used in the manufacture of kraft linerboard. In 1983, 1.35 million tons of OCC will be consumed, and that will increase to more than 1.70 million tons by 1986, said Ingram. He attributed increase in demand to improved cleaning technology, which is resulting in cleaner fiber. Recycled fibers comprise 20% to 30% of the furnish used in kraft linerboard presently, he noted.

Recycled 'stigma' dispelled. "For a number of years, there was a stigma about using recycled fiber in kraft linerboard," said Ingram. "The recycled fiber is now so clean the stigma has disappeared."

In addition, the cost of building a new kraft linerboard mill is presently about $350,000/daily ton while the cost per daily ton for expanding capacity of existing mills is nearly half as much. Stone spent $155,000/daily ton to expand its Florence, S.C., mill by improving cleaning equipment, said Ingram.

Another expansion of the Florence mill is expected to be completed by 1985. It also involves installing better cleaning equipment to increase recycled fiber capacity by 108,000 tons to 450,000 tpy, he noted.

Dealers look to Southeast. Ingram also noted that paper stock markets may change soon. Due to the recent deregulation of the railroads, more northeastern and midwestern paper stock producers are likely to start selling in the Southeast, he said, which is seen as "a major growth area" for secondary fiber consumption.

Wastepaper markets are also changing due to increasing consumption of old newspapers by newsprint producers within the last decade, said William Keiss of Interstate Recycling, div. Great Eastern Packing & Paper Stock Corp. In 1973, three mills using 100% old newspapers produced 312,000 tons of newsprint. In 1982, five mills using 100% old newsprint made 723,000 tons. In addition, 900,000 tons were made in 1982 by four mills using 25% or more old newspapers in their furnish, said Keiss. Demand for old newspapers should rise in proportion to the increase in consumption of newsprint. Allowing for a 2.5% average annual real growth in the economy, consumption should rise to 13.4 million tons by 1990, an increase of 19.3%, he said.

CANADIAN DEMAND ON RISE. Canadian wastepaper usage is expected to rise to 1.3 million tons in 1983, compared with 1.26 million tons last year, said David A. Berkowitz, of Hancock-Lehigh in Philadelphia.

Gypsum board, tissue and towel segments of the Canadian market are expected to show particularly strong rebounds this year, he noted. The panic buying evident earlier this year, however, has ended because

TABLE 1: **U.S. wastepaper exports to major consuming countries (short tons).**

Country	Jan.-June 1983	Jan.-June 1982	% change
Canada	165,639	125,948	+31.5%
Mexico	208,984	112,459	+85.8
Venezuela	41,994	71,901	−40.2
Italy	31,683	68,600	−53.8
China	25,998	23,926	+8.6
Japan	112,070	40,021	+180.0
South Korea	266,856	244,199	+9.3
Taiwan	246,034	232,680	+5.4
All exports	**1,218,768**	**1,064,389**	**+14.5**

Source: National Assn. of Recycling Industries from Dept. of Commerce.

say NARI roundtable speakers

mill inventories of paper stock are back to a "comfortable level," he said.

Gypsum mills are running seven days a week with backlogs that are expected to last through the end of the year, and the paperboard business has begun to show a "steady but slowly increasing trend," said Berkowitz.

Sanitary tissue market. The most positive factor of the Canadian market, however, appears to be the sanitary paper industry, which includes facial, toilet, toweling and napkin, he noted. These mills, which took no downtime in 1982, are expected to continue relying almost totally on the U.S. for their ledger grades. This segment of the industry is expected to run near capacity through 1984, said Berkowitz.

Pulp substitute prices in Canada appear to be heading for a drop in the near future if virgin pulp prices do not start to improve. Currently, pulp subs and some virgin pulp prices are at about the same level, said Berkowitz.

Increased demand for pulp substitutes is tightening the U.S. market, though, said James A. Adamski of Miami Paper Corp. He noted that fine paper markets are improving, and 1983 is expected to be a good year for printing and writing papers.

Producers of fine papers are looking closely at labor negotiations under way in British Columbia, though. Large wage settlements could put a damper on their markets by hiking virgin pulp prices, resulting in increased demand and higher prices for pulp substitutes also, he said.

MEXICAN WASTEPAPER STOCKS DOWN. Mexican mills are in dire need of fiber, but are having problems securing the financing, according to William A. Nielsen, of Nielsen & Nielsen Inc., Pomona, Calif. In addition, uncertainty over the peso entails risks in dealing with producers there. The lack of fiber has caused as many as 10 mills to shut down, he said.

Although the peso has remained fairly stable for about six months, it could easily be devalued again in the fourth quarter, noted Nielsen. The high rate of inflation in Mexico has resulted in very little consumer spending, and a production slowdown is expected in the fourth quarter, he said.

Strong dollar in Europe. The strong dollar has kept Europe out of the market. Spain has increased its wastepaper usage, but the industry there still is severely depressed. The Scans currently have an oversupply of old news of about 80,000 tons.

Italy remains the biggest European consumer and is in dire need of corrugated and the brown grades, but the industry there is also in the doldrums, said Nielsen.

Germany appears to have increased its recycling efforts and England reportedly is supplying the Netherlands, France and Spain with some paper stock. But supplies of virgin pulp are up again and demand for pulp subs is once again dropping, he noted.

Freight wars to Far East. Paper stock dealers exporting to the Far East are getting more money for their shipments currently because of cheaper freight rates, according to James Walker of Independent Paper Stock Co. Total exports of all paper stock from the U.S. are expected to reach 3.1 million tons by 1985, he said.

People's Rep. of China is expected to increase its consumption from the West Coast and East and Gulf Coast areas. Some problems need resolving, however, before the market reaches its full potential, including expanding China's facilities for ship loading and unloading, he said. Exports to South Korea and Taiwan, the two largest overseas consumers of U.S. paper stock, are expected to remain robust through the end of the year, he said. Japan, on the other hand, appears to be reducing its reliance on U.S. wastepaper supplies, said Walker. Only about 1% of its fiber needs come from the U.S. because of a "very fine" collection system within its borders. ■

TABLE 2: **Use of corrugated in U.S. mills, 1980-2000 (000 short tons).**

Grade	1980	1990	2000
Paper—all grades	244	270	310
Unbleached kraft paper	871	2,360	4,500
Semichemical paperboard	1,152	1,585	2,030
Recycled paperboard	4,200	5,190	6,210
Construction	399	420	440
Total	**6,866**	**9,825**	**13,490**

Source: Franklin Associates Ltd.

TABLE 3: **Use of old newspapers in U.S. mills, 1980-2000 (000 short tons).**

Grade	1980	1990	2000
Newsprint	852	1,500	2,200
Tissue	149	200	270
Other paper	14	30	150
Recycled paperboard	1,232	1,300	1,420
Other paperboard	12	40	45
Construction	305	350	400
Total	**2,564**	**3,420**	**4,375**

Source: Franklin Associates Ltd.

1983 pulp mill peroxide use increasing

By BARRY SHOCKETT

Although peroxide production in 1983 has been running slightly ahead of 1982, substantially higher exports (up almost 25% on an annualized basis) will result in domestic consumption dropping somewhat this year. However, the rationalized industry is predicting a return to growth in demand over the next two or three years of at least 7%/year, as most markets—including pulp bleaching—should show significant improvements over the previous years.

In Canada, where hydrogen peroxide usage by the pulp and paper industry dominates the marketplace, suppliers are expecting the strong growth in 1983.

U.S. statistics for hydrogen peroxide (000 short tons)

	1980	1981	1982	1983e
Nameplate capacity	197	193	193	179
Production	116.5	112	108	110.5
Apparent consumption	111	107.5	102	101
Pulp bleaching	12	13	13.5	15
Exports	8.5	8	9.3	11.5
Imports	3	3.5	3.2	2

Sources: Bureau of Census, U.S. Dept. of Commerce; *Pulp & Paper* estimates.

Canadian statistics for hydrogen peroxide (000 short tons)

	1980	1981	1982	1983e
Total demand	7.5	7.4	7.5	9.4
Pulp bleaching	5.2	4.9	5.1	6.8
Miscellaneous*	2.3	2.5	2.4	2.6
Imports	7.5	7	9.6	9.4

*Including textile bleaching and water treatment.

HYDROGEN PEROXIDE

UNITED STATES

Uses: Hydrogen peroxide (H_2O_2) is used by the pulp and paper industry to bleach chemical and mechanical pulps as well as to deink recycled newspaper stock. Its major use is as a chemical intermediate.

Demand: An estimated 15,000 tons of H_2O_2 will be used by pulp mills in 1983, compared with the 13,500 tons in 1982. Total consumption is expected to decrease slightly to 101,000 tons from the 102,000 tons estimated for 1982. Chemical synthesis accounts for almost 30% of peroxide demand, compared with the 15% share held by the mills. Of the remaining applications, industrial effluent treatment is showing good growth.

Sources: Following the acquisition by Interox of PPG Industries' Ohio plant late last year, the remaining three producers (in descending order of capacity) are: FMC, E.I. DuPont, and Interox America. The former PPG facility was subsequently closed early in 1983, while FMC shut down its small Washington unit, reducing industry capacity to 179,000 tons.

Availability: Despite the two closures, there is still adequate capacity to meet demand. 1982, market; 1981, market; 1980, market.

Pricing: After a two-year hiatus and following an unsuccessful attempt last summer, peroxide prices finally rose in January 1983. 70% solution in tankcars now costs 43¢/lb, f.o.b. producing point, freight equalized. Pricing history: 1982, 39.5¢/lb; 1981, 39.5¢/lb; 1980, 35.5¢-36.5¢/lb; 1979, 32.5¢/lb.

Forecast: Continuing growth in mechanical pulping plus increased H_2O_2 usage by kraft mills (in the E-2 stage) is expected to result in an annual 10% increase in pulp and paper industry demand over the next few years. The current price should remain steady up to the second quarter of 1984.

CANADA

Uses: Mechanical and chemical pulp bleaching account for most of the H_2O_2 consumed in Canada. Other end-uses include textile bleaching and water treatment.

Demand: Pulp and paper industry peroxide usage was down 4% in 1982 to an estimated 5,100 tons, compared with the 4,900 tons used in 1982. However, consumption in 1983 is expected to reach 6,800 tons, with total demand rising to 9,400 tons, compared with the 7,500 tons in 1982.

Sources: Imports continue to supply the total Canadian demand for H_2O_2. In 1982, U.S. shipments accounted for almost 90% of the total. The major importers are still C-I-L (from FMC) and DuPont Canada (from its U.S. parent), although Interox America has recently become more of a factor.

Availability: There is sufficient excess U.S. capacity to handle Canadian requirements for the foreseeable future. 1983, market; 1982, market; 1981, market; 1980, market to tight.

Pricing: Prices, unchanged for two years, rose 12% at the beginning of 1983, reflecting the price boost in the U.S. Bulk, 70% solution, tank trucks, f.o.b. Toronto, Ont./Montreal, Que., is currently $1.295/kg (58.7¢/lb). Pricing history: 1982, $1.157/kg (52.5¢/lb); 1981, $1.157/kg (52.5¢/lb); 1980, 95.8¢-$1.05/kg (43.5¢-47.6¢/lb); 1979, 90.6¢-95.8¢/kg (43.1¢-43.5¢/lb).

Forecast: Previously postponed pulp mill expansion programs reactivated as the economy strengthens should increase consumption by nearly 30%. Continuing growth in thermomechanical pulping and increasing production of higher brightness groundwood specialties could boost H_2O_2 consumption to 15,000 tons by 1987.

Mr. Shockett is consulting editor-chemical markets for Pulp & Paper.